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Comments of the Rubber Manufacturers Association on

Advance Notice of Proposed Rulemaking on Tire Sidewall Labeling Requirements

National Highway Traffic Safety Administration U. S. Department of Transportation

Docket No. NHTSA-00-8296-//

30 January, 2001

Staff Contact
Steven Butcher, Vice President
Technical and Standards
Rubber Manufacturers Association
1400 K Street, N.W.
Washington, D.C. 20005

I. Introduction

The Rubber Manufacturers Association ("RMA") is a national trade association representing the domestic tire and rubber products manufacturing industry. RMA's tire industry members include every major U.S. tire manufacturer: Bridgestone/Firestone, Inc., Continental Tire North America Inc., Cooper Tire & Rubber Company, Goodyear Tire & Rubber Company, Michelin North America, Pirelli Tire North America, and Yokohama Tire Corporation. There are over 1 billion tires in use on our nation's highways and these manufacturers produce approximately 90 percent of them. They operate 40 manufacturing facilities and employ almost 160,000 people in this country.

Tire design and production involves sophisticated engineering in product design, testing, manufacturing, and analysis. Designing and building today's complex tires is no simple task. Producing a tire involves a combination of chemistry, physics, and engineering plus more than 200 raw materials including natural and synthetic rubbers, metals, fabrics, oils, pigments, and other chemicals.

RMA is pleased to provide NHTSA with these comments regarding Docket No. NHTSA-00-8296, which, among other issues, specifically addresses the information that tire manufacturers should be required to place on tire sidewalls. Our comments address tire labeling issues for passenger car tires and light truck tires (through load range E, or load index 124), plus motorcycle tires and recreational, boat, baggage, and special trailer tires. Labeling issues for

medium and heavy-duty truck tires are excluded from these comments and may need to be addressed separately.

RMA has long recognized appropriate tire sidewall labeling as an important manufacturing and safety issue. The industry addressed many of the issues raised in this docket in our petition in January 1999 to modify Federal Motor Vehicle Safety Standard (FMVSS) 109. The industry believed then and continues to believe that the primary focus for any changes to tire sidewall labeling should be safety. RMA member companies have carefully examined each question posed by NHTSA with that prerequisite in mind. In addition, RMA and its members were strong supporters of the recently enacted Transportation Recall Enhancement, Accountability and Documentation ("TREAD") Act, which requires NHTSA to conduct this rulemaking.

Our comments are contained on the following pages and correspond to the 31 questions presented for public comment in the ANPRM. RMA also intends to participate fully in any subsequent rulemaking proceeding that addresses the issues presented in this ANPRM and to provide additional information to NHTSA to assist the agency in promulgating regulations consistent with the provisions of the TREAD Act.

II. RMA's Responses to Questions Presented in the ANPRM

A. General Consumer Knowledge and Behavior/Availability of Information to Consumers

(1) Consumer Information for Safety and Recall

RMA believes that information needed to maintain tires properly is available to consumers. Such information is routinely found on, for passenger cars, the vehicle's tire placard, which is required to be permanently affixed to the glove compartment door or an equally accessible location; and for multipurpose passenger vehicles, trucks, buses, trailers, and motorcycles, this information is found on the vehicle's certification label. Information on tire care and maintenance is also often found in the vehicle owner's manual.

Consumers need four basic pieces of information to safely maintain and care for their tires: (1) size, (2) load index value, (3) speed symbol, and (4) inflation pressure. Additionally consumers need the Tire Identification Number (TIN) in case of a tire recall. Tire size, load index value, speed rating, and TIN can and should be molded on the sidewall of tires. The correct tire inflation pressure is vehicle specific and thus cannot be given on the sidewall.

(2) Consumer Understanding of Available Information (speed, inflation, weight)

RMA's consumer information survey indicates that drivers are often either unaware of critical tire safety information (tire size, load index, speed symbol, and inflation pressure), because they don't know where to find it, or they are confused by the information because it may not be communicated properly. It is clear that many drivers do not understand the relationship between their tires and the safe operation of their vehicle. All tire industry stakeholders (manufacturers, tire dealers and retailers, drivers' education classes, consumer groups, governments, etc.) must do a better job of addressing this problem.

In October 2000, RMA conducted a survey of four hundred drivers on consumer tire care and safety. Included in the survey was a sixteen-question tire maintenance quiz. No drivers received a perfect score or only missed one question. Seventy-seven percent (77%) of the drivers answered eleven or fewer questions correctly. In general, the survey revealed that consumers do not know how to use the tire information currently available. A copy of the report from the RMA survey is included with these comments as Attachment I.

On basic tire care and safety information, this is how the surveyed drivers responded:

- **Recommended Tire Pressure**: Only forty-five percent (45%) of the drivers correctly responded to the question as to the source (owner's manual or vehicle placard) of information for recommended tire pressure. However, twenty-seven percent (27%) responded incorrectly by identifying the tire sidewall.

- **Factors Related to the Wear**: A high percentage of individuals recognized the following factors as contributing to tire wear: underinflation of the tire (95%), overloading the vehicle (82%), unbalanced wheels (95%), misalignment of wheels (97%). Only 48% recognized that getting a vehicle stuck in snow, ice, mud, or wet grass could contribute to tire wear.

- **Cold inflation pressure**: Fifty-six percent (56%) of the drivers knew that the best time to check the tire pressure is when the tires are cold. One-third (33%) of the drivers incorrectly believed that the best time to check the tire pressure is when the tires are warm. Twelve percent (12%) of the drivers "did not know". Only fifty-two percent (52%) of the respondents knew that the pressure of the tire should not be reduced when the tire temperature is warm. Twenty-eight percent (28%) of the drivers believed it was possible to determine if a tire was underinflated by looking at it.

- **Tire Failure**: Fifty-five percent (55%) of drivers knew that underinflation is the leading cause for tire failure. Thirty-three percent (33%) of drivers incorrectly believed that overinflation is the leading cause for tire failure.

Because of this survey, RMA initiated a multi-million-dollar, multi-year consumer education campaign for tire care and safety. This program focuses on four elements of tire care and safety: pressure, alignment, rotation, and tread, or "PART". RMA's PART campaign will focus on the current driving public as well as students in drivers' education classes. A copy of a brochure from the PART campaign in English as well as Spanish is attached to these comments as Attachment II.

(3) Consumer Use of Guidance (inflation) and
(4) Tire Information Wanted by Consumers

When asked, unaided, in the RMA survey to identify the tire maintenance tasks they routinely performed (or have someone else perform) on their vehicle, 53% of the drivers said that they check their vehicle's tire pressure or rotate the tires. Twenty-one percent of the drivers said they check their vehicle's tires for wear and bald spots. Nine out of ten consumers say they have checked their vehicles tire pressure within the past six months and 56% said they did it less than one month ago. In both the survey and subsequent focus groups, drivers indicated to RMA that they were interested in a variety of tire care and safety information.

A 1999 tire safety survey, prepared for the AAA Foundation for Traffic Safety found that about half (48%) of American drivers who check their own pressure incorrectly consult the tire sidewall, and that 27% consult the owner's manual, and 18% use the vehicle tire inflation sticker (placard) to determine the optimum tire pressure. Many consumers recognize the importance of tire inflation pressure to the safe operation of their vehicles, but there is a lot of misinformation and confusion as to what the correct inflation should be and where to find it. A copy of the AAA tire safety survey report is included in these comments as Attachment III.

To assist the driving public and to promote traffic safety, NHTSA should consider requiring tire pressure information to be available to consumers in a convenient, standard location and format on each vehicle. Providing this information in a standard location and format would allow individual drivers who have multiple vehicles, rent or lease vehicles, or buy new or used vehicles to easily find and use appropriate tire pressure information. Drivers' education programs could include this information in their programs. Tire manufacturers cannot provide this information on the tire because it is determined by the vehicle manufacturer.

B. TIN Information

TIN Location

(5) Easier to Determine if Tires are Covered by Recall

RMA could support a requirement for the TIN to be placed on the intended outboard side of a tire. Cost, timing and any unintended adverse safety consequences due to changes in the manufacturing process are issues of concern. For example, manufacturers will face substantial costs to change existing molds. Any requirement for an immediate change, even with several months prior notice, may not be practical and would cost an estimated $85 million. Total costs to the economy could exceed $100 million annually. A suitable phase-in period is recommended.

(6) TIN on Both Sidewalls

Because it would not create any additional safety benefits, we cannot support a change that would require the TIN on both sides of the tire. In fact, placing the TIN on both sides of the tire could create a workplace safety hazard for tire industry employees due to changes in the manufacturing process. Substantial change over costs for existing molds, plus other significant manufacturing costs would result from a requirement for molding the TIN on both sides. Such a change could not occur immediately and would likely require several years to complete. The better solution is to require that the TIN be placed on the intended outboard side of the tire which would place this information in an easily accessible location while minimizing increased risks to workers and costs to manufacturers.

(7) Economic Costs for TIN on Both Sidewalls

Existing molds would have to be changed. Because tire production occurs 24 hours a day, seven days a week, there would be substantial lost production costs to make the changes, plus weekly on-going costs to make changes to both sides of molds. We estimate that the cost for changing existing molds—including cost of lost production during the initial change over plus the additional ongoing weekly manufacturing costs to make the additional changes—could well exceed $100 million annually. Based on the number of recalls made over the past 30 years, we believe the requirement to place the TIN on both sides of the sidewall is unnecessary given the cost of implementation and lack of added benefit. Instead RMA supports placement of the TIN on the intended outboard side of the tire as a reasonable alternative solution.

(8) TIN Location Relative to Bead and Shoulder

The location of the TIN should remain as specified today. The current location provides the best protection from abrasion.

TIN Content and Readability

(9) TIN Additions/Deletions

The substantive information that is currently required in the TIN should remain the same. The purpose of the TIN is to provide consumers with information in the event of a recall. The TIN provides this information. NHTSA should focus on safety-related information. By expanding the information in the TIN, NHTSA would be reducing the legibility of other important safety information.

(10) TIN Optional Symbols

Tire manufacturers currently use the optional digits in the TIN. Furthermore, there is no advantage to reducing the digits from 12 to 8. Indeed, in the event of a future recall, information should be clear and consistent. Without identifying a specific, pressing need this information should not be altered.

(11) TIN Appearance and Readability

The appearance and readability of the TIN is currently adequate. Some consumers may reject any concept of color and may even try to remove the TIN. Having the TIN on the intended outboard sidewall would resolve any problems with readability.

(12) TIN Symbol Height

The symbol height of the TIN should not be changed. Again, we believe that placing the TIN on the intended outboard sidewall will alleviate any perceived problems.

C. Other Tire Labeling Information

Load Ratings

(13) Maximum Load Rating Versus Load Index

The maximum load rating in kilograms/pounds serves no useful purpose and is not needed. A load index value should be required on the tire and on the vehicle tire placard. The consumer would then simply have to match a two or three digit number on the tire and vehicle tire placard to assure the proper tire load capacity for their vehicle. The concept of load index values is not new. Countries in Europe and elsewhere, that have national or regional regulations based on the UN/ECE regulations, already require load index numbers on tires. In the United States it is also becoming increasingly common for tires to come with a load index number as part of the tire service description.

(14) Consumer Understanding/Use of Load Index

RMA has no direct survey data on consumer use of load index values. We suspect that neither the tire's maximum load rating nor the load index value are routinely used by consumers. But, for safe performance of the tire, it is important that the tire's load carrying capacity match or exceed the vehicle load at a given wheel position. The best way to communicate this relationship is through the use of load index values. When purchasing replacement tires, consumers should be careful to purchase the proper tire size and load carrying capacity. This information, in the form of tire size and load index number, should be shown on the vehicle tire placard.

We have no statistics on how many consumers replace extra load capacity tires with standard capacity tires. However, such an action could, if the original equipment tires were specified for extra load to meet the anticipated maximum loaded vehicle weight, result in under capacity tires and thus a safety problem.

(15) Tire Retailer Assistance for Correct Load Rating or Load Index

A knowledgeable tire dealer will be in a position to provide extensive assistance to customers. Nevertheless, regardless of the point of sale, consumers should have help available, as necessary, in selecting the tire size, load index value, speed symbol, and inflation pressure that is right for their vehicle.

(16) Determination of Inflation/Load Capability

Consumers should use the tire size, service description (load index and speed symbol), and inflation pressure shown on their vehicle's tire placard.

Few motorists use the load rating information (kilograms or pounds) as currently found on the sidewall of tires. To use this information they must first know the gross axle weight rating for the vehicle and then divide by the number of wheel positions on the axle (usually two). Because of variance in possible cargo loads—particularly for pickups, vans, and SUVs—the only way to know the actual GVWR is to weigh the vehicle. Even then the motorist would still need to know the weight on each axle and divide that number by the number of wheel positions to arrive at the load for each position. It makes more sense to let the vehicle manufacturer make these calculations based on maximum anticipated design loads, and determine a load index value for the vehicle. The motorist would then only need to match the recommended load index numbers on the vehicle and tire to achieve the proper load capacity.

(17) Vehicle Overloading

Consumers sometimes overload their vehicles. Overloading a tire results in over deflection which can cause tire failure. We do not have data on the frequency or degree of overloading, but it is our belief that tires are often underinflated for the load they are carrying. Whether overloaded or underinflated the result in either case is over deflection which can build up excessive heat that may result in sudden tire destruction.

Vehicle manufacturers can help guard against overloading by specifying tires and operating pressures with some reserve load capacity for vehicles where overloading is reasonably foreseen.

We are also concerned that the transport of manufactured homes allows an 18% overload of the tires. Although the primary responsibility for manufactured homes belongs to HUD and the Federal Motor Carrier Safety Administration, the mobile home tires used to transport manufactured homes are within the scope of FMVSS 119. We believe that the 18% overload should not continue to be allowed.

Plies and Cord Material

(18) Number of Plies and Cord Material Plus Related Information (mileage warranty)

The labeling requirement for the number of plies and generic name of cord material is a throw back to a prior era when both cotton and synthetic fibers were used as reinforcement material. Ply ratings were used to recognize the strength differential between cotton and certain synthetic materials. In today's manufacturing environment, a higher number of tread or body plies do not necessarily translate into a better tire for a given set of circumstances. Providing the consumer with the actual number of plies in a tire provides no safety value and thus this requirement can be removed to make room for more important information.

Non-safety-related consumer information such as mileage warranty is better communicated to the consumer at the point of sale where the warranty conditions and exclusions can be explained to the consumer verbally and/or via a paper label or brochure, or electronic transmission.

Treadwear Indicators

(19) Label In Vehicle, Sidewall Marking to Pinpoint Location

There is no need to require that information on treadwear indicators be labeled on the vehicle. This information should remain in the owner's manual. Tire retailers should also be capable of explaining this information to consumers.

Many manufacturers currently use some mark on the upper sidewall or tread edge to indicate the location of the treadwear indicator. No additional marking is needed. The treadwear indicators become visible in the tread pattern when the tire is worn down to 2/32 inch.

Current NHTSA regulations for inspection standards for vehicles in use (49 CFR 570.9 & 570.62), specify inspection for the presence of treadwear indicators in **two adjacent** major grooves (at three locations spaced approximately equally around the tire) as an indication of wearout. We recommend that the regulation be changed to indicate that the presence of a treadwear indicator in **any** major groove be used as an indication of wearout.

UTQGS

(20) Treadwear, Traction, Temperature (understanding and usefulness)

Temperature performance should be expressed as a speed rating symbol since there is a clear relationship between speed performance and temperature (tires speed rated S and higher normally equate to temperature grades of A or B). Speed ratings should be included with the tire size designation along with the tire's load index number as part of a service description for the tire.

Traction grades should be removed from the tire and included as part of information communicated to the consumer at the point of sale. We note that the United Nations World Forum for Global Harmonization of Automobile Standards has a task group working on a global technical regulation for tire wet grip performance. The Agency should coordinate any future requirements on this subject with the ongoing work of the U. N. group.

Manufacturers' warranty programs, for which information is available to consumers at the point of sale, supercede Treadwear grades. Warranty programs are based on tire treadwear but also address other important safety and maintenance issues important to consumers.

(21) UTQGS Application to SUVs, MPVs, and Light Trucks

We do not support labeling additional tire categories with UTQGS information. Our proposal is that UTQGS information should be removed from the sidewall of tires and be replaced by a service description (load index and speed rating). Information on treadwear and traction should be made available to consumers at the point of sale.

Speed Rating

(22) Replacement Tires at Least as High as Original Equipment Tires

A speed rating, in the form of a speed symbol, should be required on all tires and on all vehicle tire placards. The consumer would then simply have to match the speed symbol on the tire and vehicle tire placard to assure the proper tire speed capability for their vehicle.

Our previous petition to NHTSA to revise FMVSS 109 as per GTS 2000 establishes tests for verifying the speed rating of a tire. Such speed ratings can be used by OEMs to match the speed capability of the tire and vehicle.

Consumers should understand that replacement tires of equal speed rating are recommended. Use of lower speed rating tires will decrease the safe operating speed of the vehicle.

Run-flat and Extended Mobility Tires

(23) Identify Capability on Tire and/or Vehicle Label

Run-flat or extended mobility tires should have that capability identified on the tire and the vehicle tire placard. An ISO committee is currently studying how to best identify the run-flat capability of a tire. The agency should defer taking any action on this issue until the committee has completed this study.

Retreaded tires

(24) Any Proposed Changes

No changes to FMVSS 117 should be made until or unless relevant, pending decisions on possible changes to FMVSS 109 are issued.

Tire Inflation Pressure

(25) Placard/Certification Label Information and Location

All vehicles should be required to have a tire placard containing the tire size, service description (load index and speed symbol), and tire inflation pressure. For speeds above 100 mph the vehicle tire placard should provide information on additional tire pressure requirements as specified by standardizing bodies (Tire and Rim Association, European Tyre and Rim Technical Organisation, Japan Automobile Tire Manufacturers Association, etc.). Consumers should be able to take the information on tire size and service description, as found on the vehicle tire placard, and match it with identical information found on the sidewall of the tire.

The vehicle's tire placard should be in a standardized format and placed in a convenient, standardized location on all vehicles.

(26) Removal of Sidewall Maximum Inflation Value

The single most important factor in tire care is proper inflation pressure. Unfortunately, the maximum tire pressure on the sidewall is a source of misinformation and confusion, and thus should be removed from the sidewall.

Removal of the maximum inflation number from the sidewall will improve safety **if** the correct inflation pressure (as given on the vehicle's tire placard) is clearly and conveniently communicated to consumers, **and** provided they act on the information provided.

Dissemination of Tire Safety Information

(27) What Type of Information Needed

Motorists have two basic responsibilities with regard to safe tire operation.

First, they should insure that the proper tires are fitted on the vehicle. This can be accomplished by matching the tire size, load index, and speed rating shown on the

vehicle placard (as per our recommendation) with the size, load index and speed rating shown on the tire.

Second, they are responsible for maintaining the correct inflation pressure as shown on the vehicle placard. Any pressure below the placard pressure could result in decreased vehicle handling and fuel economy, faster tire wear, and possible tire failure.

It is clear from surveys that many operators do not maintain proper inflation pressure. They may not understand the importance of proper tire inflation or know the recommended frequency of inflation pressure checks. The maximum permissible inflation pressure shown on the tire may also confuse them.

It is our recommendation that:
1. The operating pressure be shown in a clear consistent location on the vehicle,
2. The maximum permissible inflation pressure be removed from the tire to eliminate any possible confusion, and
3. Information about the importance of proper inflation pressure and the recommended frequency of inflation pressure checks be included in the vehicle or owner's manual.

Motorcycles and Trailers

(28) Include/Exclude From Amended Rules

As with other highway tire categories, trailer tires and motorcycle tires should be required to have the tire size, load index, and speed rating molded onto the sidewall. Likewise, vehicles requiring use of trailer or motorcycle tires should be required to have a vehicle tire placard listing the correct tire size, load index, speed rating, and inflation pressure. Consumers could then directly match the size, load index, and speed symbol for vehicle and tire, plus they would know the correct tire inflation pressure.

In recognition of the limited sidewall labeling area available for certain tire types, the last sentence in the existing requirement of FMVSS 119, Section 6.5 states: "Markings may appear on only one sidewall and the entire sidewall area may be used in the case of motorcycle tires and recreational, boat, baggage, and special trailer tires." Any revised labeling requirements should retain this recognition and allowance as presently constituted.

Font Height for Labeling Information

(29) Height and Contrasting Colors for Symbols Required by 109, 119, Date Code, and UTQGS

There is no need to change the current symbol heights specified. Any changes would result in changes to all existing molds, which in turn would require a significant capital outlay. The use of contrasting colors would greatly increase an already complex process and would not be practical. Spatial constraints must be considered when laying out the location and dimension of letters and symbols.

D. Harmonization Issues

(30) Other Standards Addressing Labeling Issues Raised in ANPRM

In Europe, ECE Regulations 30 and 54 address issues raised in this ANPRM. As the Agency is aware, the United Nations World Forum for Harmonization of Vehicle Regulations (ECE WP 29) is engaged in the process of developing a global technical regulation for tires. We would also like to take this opportunity again to call the Agency's attention to the tire industry's petition to revise FMVSS 109 as submitted in January 1999. The industry's 1999 proposal was labeled Global Tire Standards – 2000 (GTS-2000) and addressed various labeling and testing criteria which are relevant to the current rulemaking (a copy of GTS-2000, with supporting data is available in docket number NHTSA-2000-8011).

(31) Minimize Unnecessary Differences

The Agency should continue to work as appropriate within the confines of the 1998 Agreement of the World Forum for Harmonization of Vehicle Regulations to promulgate a global technical regulation for tires. Over the last several years, countries seem to be trending toward separate national or regional standards. Europe, Canada, Japan, China, Saudi Arabia, Brazil, Uruguay, Korea, Mexico, and the United States all have labeling, testing, and/or certification requirements. There is much redundancy in the current situation. Among the countries cited above, there are at least seven duplicative certification-labeling schemes in use. A tire certified for use in all the above countries would have its sidewall nearly full with approval symbols, creating unnecessary confusion for consumers.

# # #

Attachments

I. Consumer Tire Maintenance and Safety Awareness Research, Report to RMA, October 2000 (31 pages)
II. RMA "Be Tire Smart – Play Your Part" brochure in both English and Spanish (4 pages)
III. AAA Tire Safety Survey (26 pages)

Attachment I.

Consumer Tire Maintenance and Safety Awareness Research

A Report to:

Rubber Manufacturers Association

October 2000

Fleishman-Hillard Research
Fleishman-Hillard Inc.

200 North Broadway
St. Louis, MO 63102
314/982-1700

1615 L St. N.W., Suite 1000
Washington, D.C. 20036
202/659-0330

[redacted]

OBJECTIVES AND METHODS

The Rubber Manufacturers Association (RMA) wants to develop an educational program that will inform consumers about the need to properly maintain their tires. To help identify the extent to which consumers are aware of and knowledgeable about tire safety, the RMA sponsored a survey to identify drivers':

- Routinely performed vehicle maintenance tasks
- Routinely performed tire maintenance tasks
- Automotive safety concerns, including concerns about tires
- Knowledge of proper tire maintenance guidelines
- Current tire and vehicle maintenance behaviors

Four hundred 11-minute telephone interviews were conducted between October 12 and October 19 to address these issues. Interviews were conducted with consumers who own or lease a vehicle they drive at least once a week and are responsible for making decisions about the routine maintenance of their vehicle by either:

- Taking their car to a service station garage, quick service shop, car dealer service shop, to a family or friend, or
- Performing the maintenance themselves

Twenty percent of the respondents are considered "do-it-yourselfers" because they, themselves, perform some of the routine maintenance on their vehicles (e.g., changing oil, rotating tires, or changing fan belts or filters). This finding is similar to a previous automotive study conducted by Fleishman-Hillard Research. In this previous study, 22% of the respondents performed their own automotive maintenance.

The telephone interviews were conducted using a random-digit-dial (RDD) sample of telephone households in the continental U.S to ensure reaching households with both listed and unlisted/unpublished telephone numbers. This method allows for many different types of consumers to be contacted based on geography, gender, education, age, and ethnicity. However, the study is somewhat skewed to younger adults because of the study parameters: the study targeted licensed drivers who own/lease a vehicle that they drive at least once a week. See Table 1. (We assume the elderly are less likely to drive.) Due to the nature of the survey audience, more respondents are men (62%) than women (38%).

Those interviewed most frequently take their vehicle to a service garage or repair shop (35%) or car dealer (26%) for routine maintenance. Few rely on a family member or friend (11%). Drivers from the Northeast (49%) are more likely than those in other census regions to have a service garage or repair shop perform the routine maintenance on their vehicles (compared with 32% in the Midwest, 32% in the South and 30% in the West). Drivers in the South are more likely than those elsewhere to have a quick service shop perform routine maintenance on their vehicles (20% in the South compared to 8% in the Northeast, 14% in the Midwest, and 17% in the West).

Age			
	18-24	8%	5%
	25-34	19%	20%
	35-44	25%	23%
	45-54	21%	18%
	55-64	12%	12%
	65 and older	[redacted]	
	Refused	1%	--
Ethnicity			
	Caucasian	80%	85%
	African-American	8%	12%
Education			
	Not a college graduate	68%	76%
	College graduate (bachelor's degree or more)	[redacted]	
Children in the household			
	Yes	39%	38%
	No	60%	62%
	Refused	1%	--
Household income			
	$50,000 or less	[redacted]	
	More than $50, 000	31%	30%**
	Refused	20%	--
Region			
	Northeast	18%	20%
	Midwest	23%	24%
	South	39%	35%
	West	19%	21%

*$49,000 or less

**$50,000 or more

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[redacted]

This study assesses drivers' knowledge of tire maintenance and safety. While drivers report having performed maintenance tasks on their tires, most drivers score poorly when given a tire maintenance quiz. The findings of the study provide direction for how to develop an educational program to inform and teach drivers about the importance of proper tire maintenance.

- Because of the recent recall of tires and consumers' heightened sensitivity to automotive safety and accidents related to tire failure, this may be the best time for a tire safety and maintenance educational program. While consumers are split regarding whether or not the tire recall has increased the attention they pay to tire maintenance, focus groups conducted on behalf of the RMA suggest that consumers feel they are more likely now than a year ago to pay attention to the maintenance of their tires.
- Only 23% of respondents, earned a "C" or higher on the tire maintenance quiz. The tire maintenance quiz is a comprehensive quiz that measures drivers' tire maintenance knowledge. The fact that a majority of drivers received a grade of a "D" or lower on the tire maintenance quiz provides evidence to justify a tire maintenance educational program.
- Due to the lack of consumer knowledge, an educational program should address the following issues related to tire maintenance. These are areas related to tire maintenance in which consumers are particularly deficient:
  - Best sources for the recommended pressure of their vehicle's tires
  - How often to rotate tires
  - When to replace a tire due to wear
  - Proper method for repairing damaged tires

- Tire safety is an issue for all drivers, regardless of age of the vehicle they drive or the amount of auto maintenance they perform. In particular, even do-it-yourselfers scored poorly on the Tire IQ quiz (81% scored a "D" or lower). An educational program should target all types of drivers.

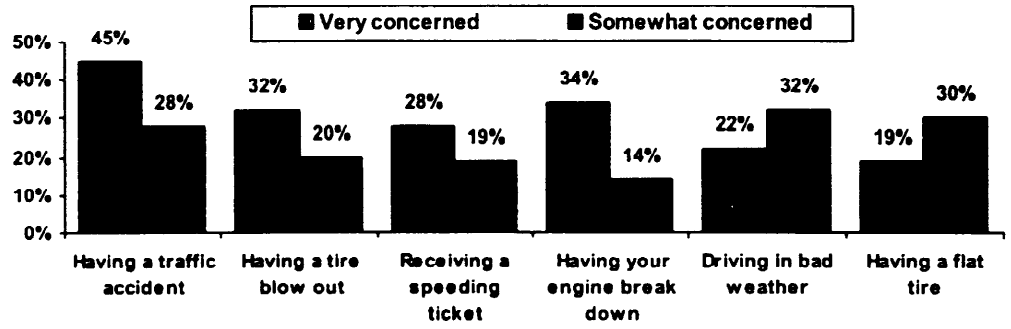
DRIVING RELATED CONCERNS

Consumers are almost equally concerned about having their engine break down as they are concerned about having a tire blow out.

The biggest concern related to driving is having a traffic accident (73% are very or somewhat concerned). Interestingly, 47% of drivers are concerned about receiving a traffic ticket -- a factor that they can completely control. Consumers are almost equally concerned about having a tire blow out (52%) as they are about having a flat tire (49%).

Figure 1. Concerns related to driving a vehicle

Question: "Are you very concerned, somewhat concerned, not very concerned, or not at all concerned about the following events related to driving your primary vehicle?"



SUBGROUP DIFFERENCES IN CONSUMERS' AUTOMOTIVE CONCERNS

The findings play out certain stereotypes: women worry about their vehicle breaking down and men may be concerned about receiving a ticket.

- Women are somewhat more likely than men to be very concerned about:
  - Having a traffic accident (50% versus 41%, respectively)
  - Having a tire blow out (36% versus 29%)
  - Driving in bad weather (29% versus 18%)
  - Having a flat tire (24% versus 15%)
- Men, on the other hand, are more concerned than women about getting a speeding ticket (31% versus 23% very concerned, respectively)
- Drivers in the South are more concerned about having a traffic accident (52%) than drivers in other regions (37% in the Northeast, 40% in the Midwest, and 43% in the West).
- Drivers in the West are more concerned about driving in bad weather (33%) than drivers in other regions (25% in the Northeast, 17% in the Midwest, and 19% in the South).

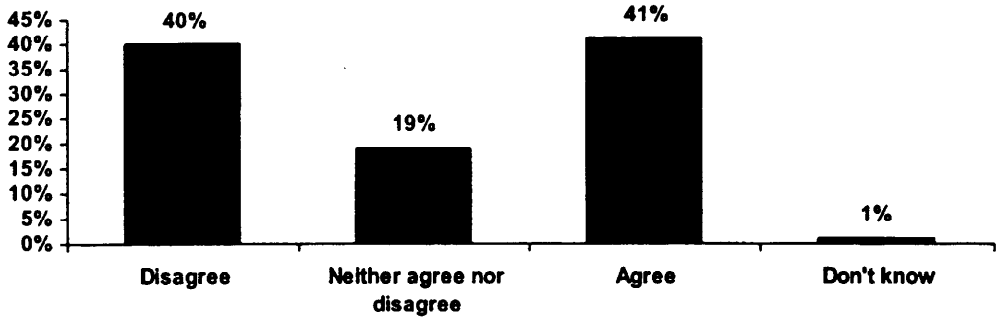
IMPACT OF THE RECENT TIRE RECALL

Two-fifths of drivers say they pay more attention to the maintenance of their vehicle's tires as a result of the recent recall.

Despite the high media profile recently given to the recall of tires, this study reveals that drivers are divided regarding whether they agree (41%) or disagree (40%) that the recent recall has made them pay more attention to maintaining their vehicle's tires. See Figure 2.

Figure 2. Tire Maintenance Sensitivity Due to Recent Recall of Tires

Question: "The recent recall of tires has made you pay more attention to the maintenance of your primary vehicle's tires."



SUBGROUP DIFFERENCES RELATED TO THE IMPACT OF THE TIRE RECALL

Some groups of drivers appear to be more concerned about tire maintenance as a result of the recent tire recall:

- Drivers 55 years of age or older have paid more attention to their tires (51% agree) than younger drivers (37% agree).
- Those who are driving vehicles that are two to five years of age have paid more attention to their tires (47%) than new car drivers (one year old or less – 33%) or drivers of older vehicles (six years old or more – 38%).
- Drivers in the Midwest and South have paid more attention to their tires (43% each) than drivers in the Northeast (33%) or West (40%).

In contrast, some groups of drivers are less concerned than their peers about tire maintenance as a results of the recent tire recall:

- Drivers who are college graduates appear to be less concerned than those less educated (37% agree versus 42% agree, respectively).
- Do-it-yourselfers appear to be less concerned than other drivers (34% agree versus 42% agree, respectively).

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TIRE IQ IS A MEASURE OF PROPER TIRE MAINTENANCE KNOWLEDGE

Forty-one percent of respondents failed a quiz assessing their tire maintenance knowledge.

A tire maintenance quiz, containing 16 questions regarding proper tire maintenance, was administered to respondents to determine their Tire IQ. Questions in the tire maintenance quiz include questions about the recommended tire pressure and proper tire maintenance. The Tire IQ scores could range from 0 to 16, where 0 means that the driver has no knowledge of proper tire maintenance and 16 means that the driver correctly answered all of the questions. In the present study, scores ranged from 0 to 14. None of the drivers who participated in the study correctly answered all sixteen tire maintenance questions. The Tire IQ scores are assigned using a report-card style grading system (A, B, C, D, and F). The breakdown of the scores and grades are listed in Table 2.

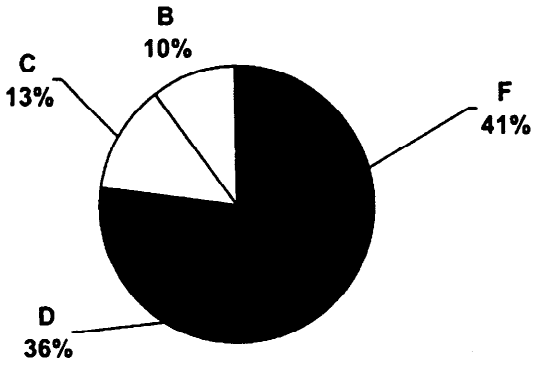
15-16 correctly answered (94% to 100%)	A	0%
13-14 correctly answered (81% to 88%)	B	10%
12 correctly answered (75%)	C	13%
10-11 correctly answered (63% to 69%)	D	36%
9 or less correctly answered (56% or less)	F	41%

* Out of 16 questions

As shown in Figure 3, only 23% of drivers who participated in the study received a "B" or "C" score on the tire maintenance quiz. None of the drivers received an "A." Therefore, one of the goals of a tire maintenance educational program should be to improve drivers' Tire IQs.

Surprisingly, do-it-yourselfers have the same Tire IQ scores (an average score of ten questions answered correctly – a "D") as drivers who do not perform their own routine maintenance tasks on their vehicles (an average score of 10 – a "D").

Figure 3. Tire IQ Scores



None of the respondents received an "A" on the Tire Maintenance Quiz

CONTENTS OF THE TIRE MAINTENANCE KNOWLEDGE QUIZ

To assess tire maintenance knowledge, drivers were asked 16 questions related to properly maintaining automotive tires.

Best Sources for the Recommended Tire Pressure

According to industry experts, some sources for the recommended tire pressures are better than others. Information provided about the tire pressure by the automobile manufacturer is considered the best source. Automobile manufacturers list the recommended tire pressure on decals affixed to the inside of the vehicle door or inside the glove box. The automobile manufacturer's recommended tire pressure is also listed in the owner's manual. In contrast, tire manufacturers list the maximum tire pressure on the sidewall of the tire. The tire pressure shown on the sidewall of a tire is not the best source for the recommended tire pressure because the maximum pressure for the tire may not be appropriate for the vehicle.

In the present study, drivers were asked to volunteer the one source that is the best for the recommended tire pressure. Forty-five percent of drivers correctly responded correctly to this question by saying the owner's manual or decals on the inside of the vehicle's door or glove box. Twenty-seven percent responded incorrectly by reporting that the best source for the recommended tire pressure was on the sidewall of the tire, 7% volunteered "tire manufacturer information" in general, and 12% said something else. Only 10% said they "did not know."

Proper Time to Have Tires Rotated

Drivers were also asked to identify how much mileage should pass before rotating their vehicle's tires. Twenty-eight percent of drivers gave the correct response: tires should be rotated every 6,000 to 8,000 miles. Seventy-three percent of drivers either don't know (35%) or gave an incorrect response when asked how many miles should pass before rotating one's tires (38%).

Factors That Increase Wear on a Vehicle's Tires

Drivers were asked whether or not a number of factors can increase the wear on a vehicle's tires. As shown in Table 3, most drivers are aware of the factors that increase the wear on tires. The correct response to each factor is highlighted in gray.

Underinflation of the tire	3%	3%
Overloading the vehicle	13%	5%
Unbalanced wheels	4%	1%
Misalignment of wheels	2%	1%
Getting a vehicle stuck in snow, ice, mud, or wet grass	43%	9%

Drivers are least likely to know that getting their vehicle stuck in snow, ice, mud, or wet grass can increase the wear on their vehicle's tires.

When to Change a Tire Due to Worn Tread

Many industry experts suggest using the "penny trick" to determine if a tire is worn and should be replaced. The "penny trick" involves putting the top of the penny inside the tire tread. If the tire tread is so worn that one can see the area above Lincoln's head, then the tire should be replaced. The space between Lincoln's head and the top of the penny is one-sixteenth of an inch. Therefore, according to industry recommendations, a tire should be replaced when the tire has worn down to one-sixteenth of an inch (if not sooner).

Twenty-two percent of drivers know that the tire should be replaced when it has worn down to one-sixteenth of an inch. Thirty-nine percent believe that a tire should be replaced when it has worn down to one-eighth of an inch, and 13% believe that the industry recommendations for replacing tires due to wear is one-half of an inch. Three percent of drivers incorrectly believe that tires should be replaced when one inch of tread remains. Nearly one-fourth of the drivers reported that they "do not know" when to replace tires due to wear.

Best Time to Check and Reduce the Tire Pressure

The best time to check the pressure of a vehicle's tires is when the tires are cold because no one has driven on them. As the tires are driven on, the tires and the air in the tires begin to heat and expand. As a result, a check of the pressure when the tire is warm is not accurate. Fifty-six percent of drivers know that the best time to check the tire pressure is when the tires are cold.

One-third of drivers incorrectly believe that the best time to check the tire pressure is when the tires are warm. Twelve percent of drivers report that they "do not know" when is the best time to check the pressure of their vehicle's tires.

The pressure of the tires should also not be reduced when the tire is warm. Only fifty-two percent of respondents know that the pressure of the tire should <u>not</u> be reduced when the tire temperature is warm.

Proper Repair of a Tire

Plugs are used to repair damage that has occurred to tires. However, industry experts do not suggest that plugs, by themselves, be used to repair a damaged tires. Forty-one percent of drivers incorrectly believe that plugs, by themselves, are an effective repair method for a damaged tire.

Uneven Tire Wear

Respondents were asked if uneven tire wear is always due to internal structural damage of the tire. While internal structural damage to the tire may be one reason that a tire has uneven wear, it is not the only reason. Uneven tire wear may also be due to unbalanced or misaligned wheels. However, 18% of drivers believe that uneven wear of the tires is always due to internal structural damage.

Does One Size Fit All?

One size of tire does not fit every type of vehicle. Therefore, it is important for drivers to know the appropriate tires to use on their vehicle. Very few (8%) believe any tire that fits their vehicle is acceptable to use.

Determining if a Tire Needs Air

Respondents were asked if it is possible to determine if a tire is underinflated within a few pounds of air pressure by looking at the tire. While it is not possible to determine if a tire is a little underinflated by looking at the tire, 28% of drivers believe that this is possible.

Main Reason for Tire Failure

According to industry experts, the main reason for tire failure is underinflation of the tires. Fifty-five percent of respondents know that underinflation is the leading cause for tire failure. However, 33% of drivers incorrectly believe that overinflation is the leading cause for tire failure.

SUBGROUP DIFFERENCES IN TIRE MAINTENANCE KNOWLEDGE

Drivers with high Tire IQ scores tend to be Caucasian men who work full-time.

The following types of drivers are somewhat more likely to have relatively high (correctly answered 12 or more questions out of 16) Tire IQ scores:

- Men,
- Caucasians,
- Employed full-time, or
- Household income greater than $50,000.

Drivers who know the best sources for the recommended tire pressure for their vehicle's tires tend to be female or have household incomes over $50,000.

The best sources for obtaining the recommended tire pressure for a vehicle's tires are the decal on the inside of the vehicle door or inside the glove box or the owner's manual. Any source of information about the recommended tire pressure that is provided by the vehicle manufacturer is an accurate source for the recommended tire pressure. Forty-six percent of female drivers compared with 28% of male drivers reported (unaided) that the owner's manual is the best source for the recommended tire pressure. Forty percent of drivers with household incomes greater than $50,000 reported that the owner's manual is the best source for tire pressure compared to 31% of drivers with lower household incomes.

Twenty-seven percent of consumers, especially men (35% of this group), believe that the sidewall of the tire is the best source for the recommended tire pressure. However, this is inaccurate. The sidewall of the tire provides the maximum tire pressure that should not be exceeded. For the most part, this maximum tire pressure is not the optimal pressure for the vehicle. Often times, tire pressure information provided by the tire manufacturer is not ideal for the vehicle.

OIL CHANGES ARE THE MOST FREQUENTLY PERFORMED ROUTINE VEHICLE MAINTENANCE TASK.

Seventy-one percent of drivers reported that they routinely change their oil when asked, unaided, to identify the types of vehicle maintenance tasks they routinely perform. Rotating tires (21%) is the second most frequent response. Ten percent of drivers said that they "check or get new tires." Only 4% of drivers volunteered that they routinely check their vehicle's tire pressure, and less than 1% said that they routinely check the alignment of their tires. Other routine maintenance tasks performed include:

- Check and change fluids (13%)
- Fix brakes (7%)
- Change air filter (7%)
- Change belts (4%)
- Change spark plugs (3%)
- Flush out radiator (2%)
- Change windshield wiper blades (2%)
- Check or replace headlights (1%)

Drivers who are Caucasian, have household incomes over $50,000, or own/lease vehicles that are only five years old or less are more likely to say that they routinely have their vehicle's tires rotated.

WHEN ASKED SPECIFICALLY ABOUT ROUTINE TIRE MAINTENANCE, HALF OF DRIVERS SAY THAT THEY ROUTINELY CHECK THEIR VEHICLE'S TIRE PRESSURE AND HAVE THEIR TIRES ROTATED.

When asked, unaided, to identify the tire maintenance tasks they routinely perform (or have someone else perform) on their vehicle, 52% of drivers said that they check their vehicle's tire pressure or rotate the tires. Twenty-one percent of drivers said they check their vehicle's tires for wear or bald spots. Only 12% offered "putting new tires on their vehicles" as a routine maintenance task.

Drivers in the South are more likely than those in other regions to report that they routinely have their vehicle's tires rotated (57% versus 52% overall).

AGE OF THE VEHICLE IS A FACTOR IN RECENT VEHICLE MAINTENANCE

Newer vehicles require less maintenance than older vehicles. Therefore, it is important to consider the age of the driver's primary vehicle when asking about maintenance behaviors. Those who have newer vehicles should perform less maintenance than drivers with older vehicles because newer vehicles typically require less maintenance.

In the present study, the age of the respondents' primary vehicles ranged from 0 to 21 years, with an average age of seven years.

Except for oil changes, newer vehicles are maintained less frequently than older vehicles.

Drivers with newer vehicles report performing routine maintenance tasks less frequently than drivers with older vehicles.

Checked tires with a pressure gauge	85%	96%	92%
Changed the engine oil	95%	93%	93%
Checked the alignment of the tires	57%	72%	66%
Replaced the windshield washer fluid	66%	84%	78%
Inspected the brake system	59%	77%	78%
Checked fan belts	60%	79%	78%
Rotated the tires	59%	77%	66%
Inspected tires for uneven wear, cracks, dry rot, or other damage	78%	89%	87%
Checked the depth of the tire tread	59%	78%	78%

Nine out of ten consumers say they have checked their vehicle's tire pressure within the past six months (92%) – with 56% saying they did it less than one month ago.

Surprisingly, drivers are just as likely to check their tires' pressure with a pressure gauge as they are likely to have their oil changed (93%). As Table 4 shows, many consumers report that they have performed these maintenance tasks in the past six months.

Almost three-fourths of drivers say they have a tire pressure gauge. However, only two-fifths of drivers have ever checked the pressure of their current vehicle's spare tire.

Seventy-one percent of drivers report that they have a pressure gauge in their primary vehicle. According to the results:

- Those who are White are more likely than drivers of other racial/ethnic backgrounds to have a pressure gauge in their car (74% versus 59%, respectively).
- Do-it-yourselfers are more likely than other drivers to have a pressure gauge in their car (84% versus 68%, respectively).
- Drivers in the Midwest (76%) and South (78%) are more likely than drivers in the Northeast (60%) or West (62%) to have a pressure gauge in their vehicle.

While a majority of drivers own tire pressure gauges, 60% of drivers have not checked the pressure of their current vehicle's spare tire. Drivers who own older cars (6 years old or more) are more likely than drivers of newer vehicles (0-1 years old) to have checked the pressure of their current vehicle's spare tire with a pressure gauge (41% versus 24%, respectively).

[redacted]

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RMA Public Affairs Questionnaire

FHR#202488
FINAL

INTRODUCTION:

Hello. This is _____ calling from _____. We're conducting an opinion survey on automobile maintenance. May I please speak with the youngest (ROTATE: man/woman) 18 years of age or older who is a licensed automobile driver? (IF NOT AVAILABLE, ARRANGE FOR CALLBACK.)

(IF NECESSARY: This is an opinion survey. We have nothing to sell.)

1. Do you currently own or lease a vehicle, which you drive at least once a week?

   1 Yes (CONTINUE)
   2 No (TERMINATE)
   3 DON'T KNOW/REFUSED (TERMINATE)

2. Are you the person who primarily makes decisions about the routine maintenance of your vehicle? IF NECESSARY: Do you either do it yourself or do you take the vehicle into a service garage or repair shop for maintenance?

   1 Yes (CONTINUE)
   2 No (TERMINATE)
   3 DON'T KNOW/REFUSED (TERMINATE)

3. Who primarily performs the routine maintenance, such as changing the motor oil, rotating the tires, or changing fan belts or filters, on the vehicle you drive the most? Is it: (ALLOW MULTIPLE RESPONSES)

   1 You, yourself, who performs the maintenance tasks, (NEED TO INTERVIEW 50 TO 80 INDIVIDUALS WHO GIVE THIS RESPONSE)
   2 A service garage or repair shop,
   3 A car dealer,
   4 A quick service shop, or
   5 A family member or friend?
   6 OTHER; please specify _____
   7 DON'T KNOW/REFUSED (TERMINATE)

4. What types of car maintenance tasks do you or does someone else routinely perform on the vehicle you drive most often? (PROBE IN DETAIL) What else? (RECORD VERBATIM)

5. Are you very concerned, somewhat concerned, not very concerned, or not at all concerned about the following events related to driving your primary vehicle? (ROTATE ORDER)

	Very concerned	Somewhat concerned	Not very concerned	Not at all concerned	DON'T KNOW/ REFUSED
Having a traffic accident	1	2	3	4	5
Having a tire blow out	1	2	3	4	5
Receiving a speeding ticket	1	2	3	4	5
Having your engine break down	1	2	3	4	5
Driving in bad weather	1	2	3	4	5
Having a flat tire	1	2	3	4	5

6. What types of tire maintenance tasks do you or does someone else routinely perform on the vehicle you drive most often? (PROBE IN DETAIL) What else? (RECORD VERBATIM)

I am going to ask you questions about automobile maintenance. Please answer the following questions for the vehicle you drive most often and are responsible for maintaining.

Tire Maintenance Quiz

7. Are you aware of the recommended pressure for your vehicle's tires?

   1 YES
   2 NO
   3 DON'T KNOW/REFUSED

8. What is the best source for the recommended tire pressure for your primary vehicle's tires? (DO NOT READ FROM LIST; ONE RESPONSE ONLY)

   1 SIDEWALL OF THE TIRE
   2 DECAL ON THE INSIDE OF THE VEHICLE DOOR
   3 DECAL ON THE INSIDE OF THE GLOVE BOX
   4 THE OWNER'S MANUAL
   5 TIRE MANUFACTURER INFORMATION (INCLUDING WEB SITE)
   6 OTHER; Please specify: _____
   7 DON'T KNOW/REFUSED

9. According to owner's manual of the vehicle you drive most often, how often should you have your vehicle's tires rotated? (ROTATE ORDER)

   1 Every 6,000 to 8,000 miles
   2 Every 3,000 to 5,000 miles
   3 Every 15,000 to 17,000 miles
   4 DON'T KNOW/REFUSED

10. As far as you know, do the following factors increase the wear on a vehicle's tires? (ROTATE ORDER)

	Yes	No	DON'T KNOW/ REFUSED
Underinflation of the tires	1	2	3
Overloading the vehicle	1	2	3
Unbalanced wheels	1	2	3
Misalignment of wheels	1	2	3
Driving on hot asphalt	1	2	3
Getting a vehicle stuck in snow, ice, mud, or wet grass	1	2	3

11. According to industry recommendations, when should a tire be replaced due to wear? Is it when the tread is worn down to: (READ FIRST LIST OF RESPONSES FOR HALF OF RESPONDENTS AND SECOND LIST FOR THE OTHER HALF OF RESPONDENTS; READ LIST UNTIL RESPONDENT SAYS "YES")

1 One-sixteenth of an inch
2 One-eighth of an inch
3 One-half of an inch
4 One inch
5 DON'T KNOW/REFUSED

4 One inch
3 One-half of an inch
2 One-eighth of an inch
1 One-sixteenth of an inch
5 DON'T KNOW/REFUSED

12. When is the best time to check the pressure of your vehicle's tires? Is the best time when your tires are: (ROTATE ORDER)

1 Warm, because you have driven on the tires, or
2 Cold, because you have not driven on the tires?
3 DON'T KNOW/REFUSED

13. Please tell me if the following statements are "True" or "False." (ROTATE ORDER)

	True	False	DON'T KNOW/ REFUSED
It is possible to determine if a tire is underinflated within a few pounds of air pressure by looking at the tire.	1	2	3
Underinflation of tires is the leading cause of tire failure.	1	2	3
Air pressure should never be reduced when the tire temperature is warm.	1	2	3
Plugs by themselves are acceptable methods of repairing a tire.	1	2	3
Uneven wear of a tire's tread **always** indicates that the tire has internal structural damage.	1	2	3
Overinflation of tires is the leading cause of tire failure.	1	2	3
Any tire that fits your vehicle is acceptable to use.	1	2	3

Tire Maintenance Behaviors

Please answer the following questions for the vehicle you drive most often.

14. What is the age of the vehicle you drive most often, regardless of how long you have owned it? (RESPONSE SHOULD BE NUMERICAL; RESPONSE IS 0 IF LESS THAN ONE YEAR)
IF NECESSARY: Not the model year of the car, what is the age of the car in years.

_____

15. When was the last time you, yourself, or someone else at your request performed the following maintenance on the vehicle you drive most often? (ROTATE ORDER)

	Less than 1 month	1 month to 6 months	7 months to a year	Over a year ago	Never	DON'T KNOW/ REFUSED
Checked the tire's pressure with a pressure gauge	1	2	3	4	5	6
Changed the engine oil	1	2	3	4	5	6
Checked the alignment of the tires	1	2	3	4	5	6
Replaced windshield washer fluid	1	2	3	4	5	6
Inspected the brake system	1	2	3	4	5	6
Checked fan belts	1	2	3	4	5	6
Rotated the tires	1	2	3	4	5	6
Inspected tires for uneven wear, cracks, dry rot, or other damage	1	2	3	4	5	6
Checked the depth of the tire tread	1	2	3	4	5	6

16. Do you currently have a tire pressure gauge in the vehicle you drive most often?

1 YES
2 NO
3 DON'T KNOW/REFUSED

17. Have you, yourself, ever checked the pressure of your current vehicle's spare tire with a tire pressure gauge?

1 YES
2 NO
3 DON'T HAVE A SPARE TIRE (VOLUNTEERED)
4 DON'T KNOW/REFUSED

Tire Safety and Maintenance Questions

18. Using a five-point scale where 5 means 'strongly agree' and 1 means 'strongly disagree,' please rate the following statement:

	Strongly Disagree				Strongly Agree	DON'T KNOW/ REFUSED
The recent recall of tires has made you pay more attention to the maintenance of your primary vehicle's tires.	1	2	3	4	5	6

The last few questions are for classification purposes only.

19. Which of the following categories includes your age:

1 18 to 24,
2 25 to 34,
3 35 to 44,
4 45 to 54,
5 55 to 64, or
6 65 years of age or older
7 REFUSED

20. What is the last year of schooling you completed?
(DO NOT READ CATEGORIES)

1 EIGHTH GRADE OR LESS
2 SOME HIGH SCHOOL
3 HIGH SCHOOL GRADUATE
4 VOCATIONAL/TECHNICAL SCHOOL
5 SOME COLLEGE
6 COLLEGE GRADUATE/UNDERGRADUATE DEGREE
7 ADVANCED DEGREE OR COURSE WORK
8 DON'T KNOW/REFUSED

21. Are you employed:

1 Full-time,
2 Part-time,
3 Retired,
4 Unemployed, or
5 Something else? Please specify: _____
6 DON'T KNOW/REFUSED

22. How many children age 17 or younger currently live in your household, if any?

0 NONE
1 ONE
2 TWO
3 THREE
4 FOUR
5 FIVE OR MORE
6 REFUSED

23. What was your total household income in 1999:

1 Less than $15,000,
2 $15,000 to $34,000,
3 $35,000 to $50,000,
4 $51,000 to $75,000, or
5 Over $75,000?
6 DON'T KNOW/REFUSED

24. Which one of the following do you consider yourself to be:

1 White,
2 African-American,
3 Hispanic-American,
4 Asian American,
5 American Indian, or
6 Something else? SPECIFY:_____
7 DON'T KNOW/REFUSED

Thank you for your help!

RECORD WITHOUT ASKING:

25. GENDER

1 MALE
2 FEMALE

Attachment IL.

YOUR TIRE MAINTENANCE CHECKLIST

PRESSURE

Underinflation is the leading cause of tire failure. It results in unnecessary tire stress, irregular wear, loss of control and accidents. A tire can lose up to half of its air pressure and not appear to be flat!

ALIGNMENT

A bad jolt from hitting a curb or pothole can throw your front end out of alignment and damage your tires. Have a tire dealer check the alignment periodically to ensure that your car is properly aligned.

ROTATION

Regularly rotating your vehicle's tires will help you achieve more uniform wear. Unless your vehicle's owners manual has a specific recommendation, the guideline for tire rotation is approximately every 6,000 miles.

TREAD

Advanced and unusual wear can reduce the ability of tread to grip the road in adverse conditions. Visually check your tires for uneven wear, looking for high and low areas or unusually smooth areas. Also check for signs of damage.

HOW TO TAKE CARE OF YOUR TIRES

Proper tire care and safety is simple and easy. The Rubber Manufacturers Association (RMA) recommends getting in the habit of taking five minutes every month to check your tires, including the spare.

If you think you may have a tire problem or are unsure of the condition of your tires, consult a tire dealer as soon as possible.

ABOUT THE RUBBER MANUFACTURERS ASSOCIATION

Headquartered in Washington, D.C., the Rubber Manufacturers Association (RMA) is the primary national trade association for the finished rubber products industry in the United States.

Founded in 1915, RMA represents over 100 member companies and affiliated organizations that manufacture products such as tires, tubes, gaskets, belts, seals and hoses. The Association is comprised of two main divisions — the General Products Group and the Tire Group.

RMA is a major force in shaping legislation and regulations affecting the rubber industry. It is widely recognized as the single most important voice of the industry and the forum through which manufacturers can work together toward common objectives.

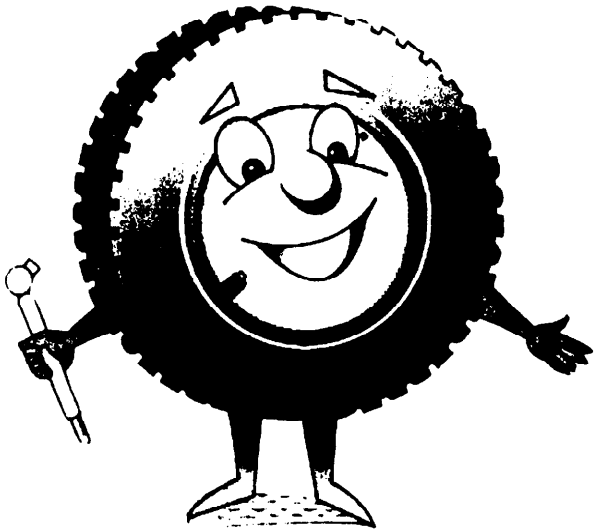
RMA operates in service areas of general concern to all members, including economics, education, technical and standards, environment, government relations, natural rubber, occupational safety and health and rubber statistics, public relations, and transportation.

To learn more about RMA, visit our Web site at www.rma.org, or contact us at:

1400 K Street, NW
Washington, DC, 20005
202/682-4800
fax 202/682-4854

RUBBER manufacturers association

be tire smart



play your PART

PRESSURE • ALIGNMENT • ROTATION • TREAD

A consumer education program of the Rubber Manufacturers Association

PRESSURE

It's important to have the proper air pressure in your tires, as underinflation is the leading cause of tire failure. The "right amount" of air for your tires is specified by the vehicle manufacturer and is shown on the vehicle door edge, door post, glove box door or fuel door. It is also listed in the owner's manual.

1. When you check the air pressure, make sure the tires are cool — meaning they are not hot from driving even a mile. (NOTE: If you have to drive a distance to get air, check and record the tire pressure first and add the appropriate air pressure when you get to the pump. It is normal for tires to heat up and the air pressure inside to go up as you drive. Never "bleed" or reduce air pressure when tires are hot.)

2. Remove the cap from the valve on one tire.

3. Firmly press a tire gauge onto the valve.

4. Add air to achieve recommended air pressure.

5. If you overfill the tire, release air by pushing on the metal stem in the center of the valve with a fingernail or the tip of a pen. Then recheck the pressure with your tire gauge.

6. Replace the valve cap.

7. Repeat with each tire, including the spare. (NOTE: Some spare tires require higher inflation pressure.)

8. Visually inspect the tires to make sure there are no nails or other objects embedded that could poke a hole in the tire and cause an air leak.

9. Check the sidewalls to make sure there are no gouges, cuts, bulges or other irregularities.

NOTE: Air pressure in a tire goes up (in warm weather) or down (in cold weather) 1-2 pounds for every 10 degrees of temperature change.

be tire smart play your PART

PRESSURE • ALIGNMENT • ROTATION • TREAD

ALIGNMENT

Misalignment of wheels in the front or rear can cause uneven and rapid treadwear and should be corrected by a tire dealer. Front-wheel-drive vehicles, and those with independent rear suspension, require alignment of all four wheels. Have your alignment checked periodically as specified by the vehicles' owners manual or whenever you have an indication of trouble such as "pulling" or vibration.

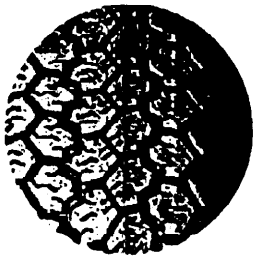
Also have your tire balance checked periodically. An unbalanced tire and wheel assembly may result in irregular wear.

ROTATION

Sometimes irregular tire wear can be corrected by rotating your tires. Consult your vehicle's owners manual, the tire manufacturer or your tire dealer for the appropriate rotation pattern for your vehicle. NOTE: If your tires show uneven wear, ask your tire dealer to check for and correct any misalignment, imbalance or other mechanical problem involved before rotation.

Before rotating your tires, always refer to your car's owner's manual for rotation recommendations. If no rotation period is specified, tires should be rotated approximately every 6,000 miles.

TREAD



Tires must be replaced when the tread is worn down to 1/16 of an inch in order to prevent skidding and hydroplaning. An easy test: place a penny into a tread groove. If part of Lincoln's head is covered by the tread, you're driving with the proper amount of tread. If you can see all of his head, you should buy a new tire.

Built-in treadwear indicators, or "wear bars," which look like narrow strips of smooth rubber across the tread will appear on the tire when the tread is worn down to one-sixteenth of an inch. When you see these "wear bars," the tire is worn out and should be replaced.

Visually check your tires for signs of uneven wear. You may have irregular tread wear if there are high and low areas or unusually smooth areas. Consult your tire dealer as soon as possible.

OTHER IMPORTANT INFO...

Practice good driving habits, which will help keep your tires in good condition.

- Obey posted speed limits.
- Avoid fast starts, stops and turns.
- Avoid potholes and other objects on the road.
- Do not run over curbs or hit your tires against the curb when parking.
- Do not overload your vehicle. Check your vehicle's tire information or owners manual for the maximum recommended load for your vehicle.

If properly cared for, tires can last a long time — usually from 40,000 to 80,000 miles, depending on the application.

Log onto www.rma.org/tiresafety for more information about tire safety.

GUÍA BÁSICA PARA EL CUIDADO DE SUS

LLANTAS

PRESIÓN

Un inflado insuficiente es la causa principal de fallo en la llanta. Provoca un deterioro innecesario, un desgaste desigual, pérdida de control del automóvil y por ende accidentes. ¡Una llanta puede haber perdido hasta la mitad de su presión del aire sin que parezca estar desinflada!

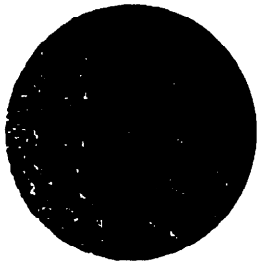
ALINEACIÓN

Un golpe fuerte contra el borde de la acera o un bache puede causar la desalineación de la parte delantera y dañar sus llantas. Haga revisiones periódicas en un taller especializado para asegurarse de que su carro está alineado correctamente.

ROTACIÓN

La rotación periódica de las llantas de su carro ayudará a que el desgaste sea más uniforme. Si el manual de su vehículo no tiene una recomendación específica, se le aconseja que rote las llantas cada 6.000 millas aproximadamente.

BANDAS



Un desgaste acelerado e inusual puede reducir la tracción de las bandas de rodamiento sobre la calle en condiciones adversas. La existencia de zonas altas y bajas o de zonas demasiado lisas son pruebas visuales del desgaste desigual de sus llantas o neumáticos. Asegúrese también de que no haya señales de deterioro.

CÓMO CUIDAR DE SUS LLANTAS O NEUMÁTICOS

La seguridad y el cuidado adecuado de sus llantas es una tarea simple y fácil. La Asociación de Fabricantes de Caucho recomienda que es importante dedicar por lo menos cinco minutos al mes a revisar sus llantas, incluida la de repuesto.

Si piensa que tiene un problema con sus llantas o si no está seguro de la condición de éstas, consulte con su taller de llantas cuanto antes.

LA ASOCIACIÓN DE FABRICANTES DE CAUCHO (RUBBER MANUFACTURERS ASSOCIATION)

Con sede en Washington D.C., la Asociación de Fabricantes de Caucho (RMA) es la principal asociación comercial nacional dentro de la industria de productos terminados del caucho de los Estados Unidos.

Fundada en 1915, la RMA representa a más de 100 compañías miembros y organizaciones afiliadas que fabrican productos tales como llantas, neumáticos o gomas, tubos, empaques, fajas, precintos y mangueras. La Asociación se compone de dos divisiones principales: el Grupo General de Productos y el Grupo de llantas.

La RMA es una organización importante en el desarrollo de legislación y regulaciones que afectan a la industria del caucho. Reconocida ampliamente como la voz más importante de la industria y el foro a través del cual los fabricantes pueden trabajar juntos para lograr objetivos comunes.

La RMA opera en áreas de servicio de interés general para todos los miembros, incluidas la económica, la educativa, la técnica y la normativa; el medio ambiente, las relaciones gubernamentales, el caucho natural, la seguridad y la salud ocupacional; la estadística del caucho, las relaciones públicas y el transporte.

Para saber más sobre la RMA, visite nuestro sitio Web www.rma.org o contáctenos en:

1400 K Street, NW
Washington, DC, 20005
202/682-4800
fax 202/682-4854

RUBBER manufacturers association

PÓNGALE CUIDADO A SUS LLANTAS

HAGA SU PARTE

PRESIÓN • ALINEACIÓN • ROTACIÓN • BANDAS

Un programa de educación para el consumidor de llantas de la Asociación de Fabricantes de Caucho

3/4

PRESIÓN

Es importante que sus llantas tengan la adecuada presión de aire, ya que un inflado insuficiente es la causa principal de fallo en la llanta. La "cantidad correcta" de aire para sus llantas es especificada por el fabricante del vehículo y se puede encontrar en los laterales de las puertas delanteras, la guantera o la tapa del tanque de la gasolina. También se indica en el manual del vehículo.

1 Cuando revise la presión de aire, asegúrese de que las llantas estén frías—es decir, que no estén calientes ni siquiera después de haber manejado una milla—. (NOTA: Si tiene que conducir una distancia considerable para conseguir aire, revise y registre la presión de aire primero y luego añadala cantidad apropiada de aire cuando llegue al lugar donde está la bomba de aire. Es normal que las llantas se calienten y que la presión de aire aumente a medida que conduce. Nunca desinfle o reduzca la presión de aire cuando las llantas están calientes).

2 Destape la válvula de una de las llantas.

3 Apriete el manómetro de presión sobre la válvula con firmeza.

4 Añada aire hasta conseguir la presión de aire recomendada.

5. Si infla la llanta en exceso, deje escapar aire apretando la clavija de metal en el centro de la válvula con una uña o con la punta de una pluma. Luego vuelva a chequear la presión con su manómetro.

6. Tape la válvula.

7. Repita el proceso con cada llanta, incluyendo la de repuesto. (NOTA: Algunas llantas de repuesto requieren una mayor presión de inflado).

8. Examine sus llantas para asegurarse de que no tengan clavos u otros objetos incrustados que podrían abrir un agujero en la goma y causar un escape de aire.

9. Revise los lados de las llantas para comprobar que no haya cortes, grietas, abultamientos u otras irregularidades.

NOTA: La presión de una llanta aumenta (si hace calor) o disminuye (si hace frío) de 1 a 2 libras por cada 10 grados de diferencia en la temperatura.

PÓNGALE CUIDADO A SUS LLANTAS

HAGA SU PARTE

PRESIÓN • ALINEACIÓN • ROTACIÓN • BANDAS

ALINEACIÓN

La alineación incorrecta de las ruedas delanteras o traseras puede causar un desgaste desigual y rápido de las bandas de rodamiento y debería ser corregida por un especialista. Los vehículos de tracción delantera, y aquellos con suspensión trasera independiente, requieren la alineación de las cuatro ruedas. Haga revisar su alineación periódicamente tal y como lo especifica el manual de su vehículo o siempre que haya alguna indicación de problemas tales como el "volante duro" (tirones laterales) o vibraciones.

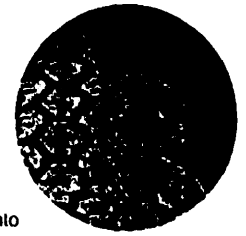
También haga revisar periodicamente el equilibrado de sus llantas. Un montaje de llantas y ruedas que está mal equilibrado puede causar un desgaste irregular.

ROTACIÓN

A veces el desgaste irregular de la goma se puede arreglar al rotar las llantas. Consulte el manual del vehículo, o acuda al fabricante de las llantas o a un taller para averiguar el patrón adecuado de rotación de su vehículo. NOTA: Si sus llantas muestran un desgaste desigual, pídale a su taller que revise y arregle la alineación y el equilibrado o cualquier otro problema mecánico de este tipo antes de hacer la rotación.

Siempre consulte las recomendaciones del manual de su vehículo con respecto a la rotación de las llantas antes de rotarlas. Si no hay un periodo de rotación especificado, debe rotar las llantas cada 6.000 millas aproximadamente.

BANDAS



Las llantas se deben cambiar cuando las bandas de rodamiento presentan una profundidad de 1/16 de pulgada o menos con el objeto de prevenir el patinaje y el deslizamiento del automóvil. Una prueba fácil: Introduzca un centavo en una de las ranuras de la banda. Si parte de la cabeza de Lincoln queda cubierta por la banda, quiere decir que usted está manejando con una banda lo suficientemente profunda. Si puede ver la cabeza entera, necesita comprar una llanta nueva.

Indicadores de desgaste incorporados, o "barras de desgaste" que consisten en tiras delgadas de caucho liso sobre la banda, se harán visibles cuando la banda alcance la profundidad mínima de 1/16 de pulgada. Cuando vea estas "barras de desgaste", la goma está gastada y debe ser cambiada.

Examine sus llantas para detectar posibles señales de desgaste en banda. Puede haber desgaste desigual si la banda presenta zonas altas y bajas o zonas demasiado lisas. Consulte con un taller de llantas lo antes posible.

MÁS INFORMACIÓN IMPORTANTE...

Practique buenos hábitos de manejo, ya que le ayudarán a mantener sus llantas en buen estado.

- Respete los límites de velocidad indicados.
- Evite fuertes aceleraciones, frenazos o giros rápidos.
- Esquive baches y objetos en la calle.
- No se suba sobre la acera o dé contra el borde al estacionar.
- No sobrecargue su vehículo. Respete la carga máxima recomendada por el fabricante o el manual de su vehículo.

Si cuida sus llantas, éstas pueden durarle mucho tiempo—normalmente entre 40.000 y 80.000 millas, dependiendo de su uso o modo de empleo—.

Visite la página www.rma.org/tiresafety para mayor información sobre la seguridad en llantas.

Attachment III.

Tire Safety Survey

Prepared For:
AAA Foundation for Traffic Safety

March 22, 1999

'75

ROPER STARCH

TURNING DATA INTO INTELLIGENCE WORLDWIDE™

Table of Contents

Introduction and Methodology

The AAA Foundation for Traffic Safety commissioned Roper Starch Worldwide to conduct a study among drivers in the general public to determine the extent of their knowledge of various tire safety issues, as well as how they maintain the condition of their vehicle's tires.

This report is based on an omnibus nationwide telephone survey of 1070 adult Americans (539 males and 531 females) who drive a car, motorcycle, or other motor vehicle at least once a week. Interviewing was conducted between March 10 and 14, 1999.

The margin of error for the entire sample is plus or minus 3 percentage points at the 95% confidence level. Results were analyzed by key demographic subgroups including gender, age, household income, region, education, race, and miles driven per year. The margin of error is higher at the subgroup level.

Highlights

- The American driver reports travelling a median of 12,000 miles per year. Those putting on the most miles are more likely to be men, younger drivers, and those from households reporting higher incomes.

- American drivers are concerned with tire maintenance. Most American drivers (82%) say their tire pressure gets checked regularly – at least once every three months, with 48% getting it checked at least once a month.

- About half of American drivers (51%) show self-sufficiency by checking their own tire pressure. Less popular choices include friends or relatives (22%) or mechanics (22%).

- Despite consciousness about checking the tire pressure, American drivers lack sufficient knowledge about how to determine optimum tire pressure. About half (48%) consult the tire sidewall, which indicates *maximum* tire pressure. Fewer check more reliable methods such as the owner's manual (27%) or the tire inflation sticker (18%).

- The method of choice for checking tire pressure is the driver's own tire gauge (86% prefer this).

- Among the 60% of drivers who have experienced a flat tire in the past five years, the most common cause is punctures, cited by three-quarters of drivers (75%).

- American drivers' self-sufficiency shines through again in the way they deal with flat tires. Half of drivers (46%) who have experienced a flat in the past five years, changed it themselves. Less relied-upon options include having a friend, family member or passerby change it (22%), continuing to drive and get help (14%), calling AAA (9%) or calling another road service provider (10%).

- Eight in ten drivers (80%) claim they could change a tire themselves, if they had to – a figure considerably ABOVE the 46% who have actually changed a flat in the past five years.

- Most American drivers (94%) check their tires for wear and tear. The most popular method is to check for wear lines (44%), followed by measuring the tire's tread (29%) and using the penny test (14%).

- Of the 22% of American drivers who have been in a skidding collision, only 12% blame the condition of their tires for the skid.

- The first choice for the safest way to deal with tire blowout is to slow down, brake and pull to the side, chosen by 64% of American drivers.

- Some gender differences emerge in this survey which support the stereotype of males as more independent and more involved with their cars. For example, men are more likely than women drivers to have their tire pressure checked monthly (38% versus 25%, respectively), to check their own tire pressure (77% versus 24%) and change a flat tire themselves (70% versus 17%). Some of these results may be explained through the finding that men drive more than women (15,000 versus 10,000 miles per year).

- Younger drivers (18-34 years) are also more likely to be more frequent drivers (accumulating 13,000 miles per year). Along with their greater physical abilities, this may explain why they tend to be more self-reliant by checking their own tire pressure (56% versus an average of 48% for all other age groups) and changing their own flat tire (52% versus 40%).

I. American Driver Profile

This survey was conducted among 1070 Americans who drive a car, motorcycle, or other motor vehicle at least once a week.

The median number of miles Americans report driving each year is 12,000, with men reporting higher annual mileage than women (15,000 vs. 10,000 miles). Those over 65 years of age report the lowest annual mileage (9,999). With regard to household income, drivers from households reporting less than $25,000 annual income drive the least miles per year (10,000), a number that increases to 15,000 miles per year for those from households earning $50,000 or more.

II. The Pressure of Tire Care

Most Drivers Regularly Check Their Tire Pressure

Recognizing the importance of properly inflated tires, American drivers check, or have someone else check, their tire pressure on a fairly regular basis. Almost half of all drivers (48%) check their tire pressure at least once a month, with one in six (16%) reporting checking it on a weekly basis. Another one-third (34%) of drivers check tire pressure every three months.

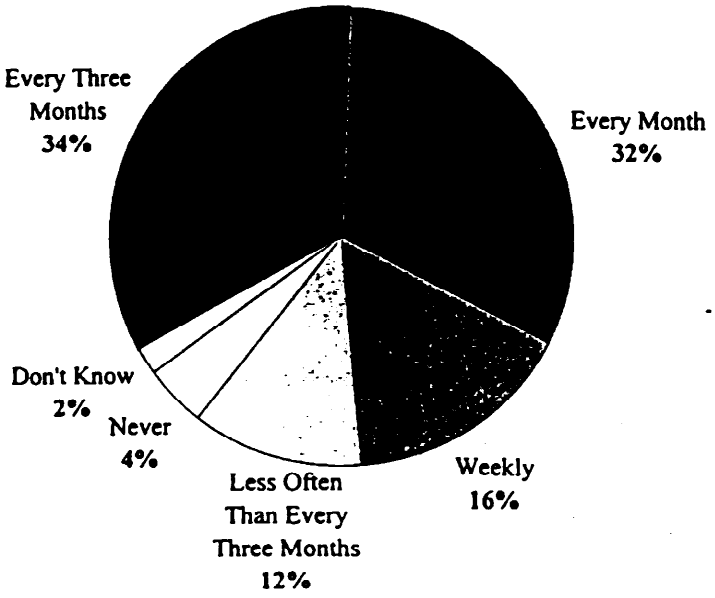
Only 12% report checking the pressure less often than every three months and a small percentage (4%) admit to never checking tire pressure.

Men seem to be more concerned with checking tire pressure, as they are twice as likely as women to check it weekly (22% versus 11%), and more likely to check it every month (38% versus 25%). Similarly, women are more likely than men to say they check it less frequently: every three months (40% versus 28% for men), less often than that (17% versus 8%), and even never (6% versus 2%).

Drivers who put at least 10,000 miles on their vehicles annually are also more conscious about tire pressure, being more likely than less frequent drivers to check it every month (34% versus 27%).

Most Drivers Check Tire Pressure Regularly [Q.3]

How often do you check, or have someone else check, the tire pressure in your vehicle?

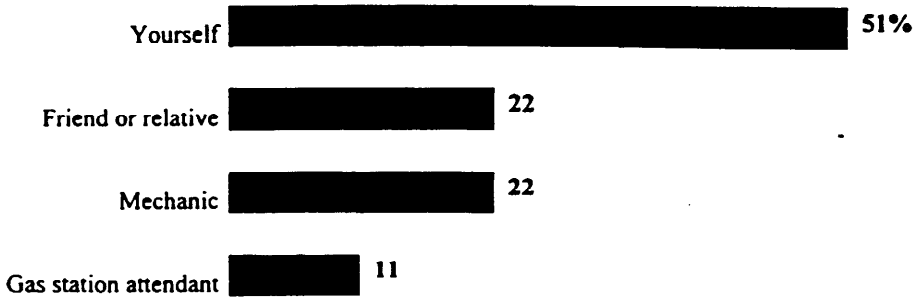


Americans Self-Reliant in Checking Pressure

About half of all American drivers (51%) say they check their tire pressure themselves. About one in five have a friend or relative (22%), or a mechanic (22%) check it. Only one in ten (11%) report that the gas station attendant checks their tire pressure.

Most Check Their Own Tire Pressure [Q.5]

Who usually checks your tire pressure?



Responses to this question vary dramatically by sex. While over three-quarters of men (77%) check the tire pressure themselves, less than one-quarter of women (24%) do the same. On the other hand, women are more likely than men to rely on friends or relatives (43% versus 2%), a mechanic (27% versus 17%), or a gas station attendant (13% versus 8%).

The younger the respondent, the more self-reliant they are in checking their own pressure. While 56% of those age 18 to 34 years check their own pressure, this number drops gradually to 39% of those age 65 years or more.

More frequent drivers (accumulating 10,000+ miles annually) are also more likely than less frequent drivers to report checking their own tire pressure (58% versus 41%).

Do-It-Yourselfers Ill-Informed About Optimum Tire Pressure

Although half of American drivers (51%) check their tire pressure themselves, few know how to correctly identify what the pressure should be. Among those who check their own pressure, almost half (48%) incorrectly refer to the tire sidewall to determine optimum tire pressure. This number is actually the maximum pressure for the tire, not the optimum level.

Consulting the tire sidewall is a method more often preferred by younger drivers, with 58% of those 18-34 years choosing this way, a figure which drops until it reaches 18% of those age 65+.

Over one-quarter (27%) consult the owner's manual, a method which also varies by age, increasing in popularity with increasing age. While 21% of 18-34 year olds prefer this method, over four in ten drivers 65 years or older (43%) use the same method.

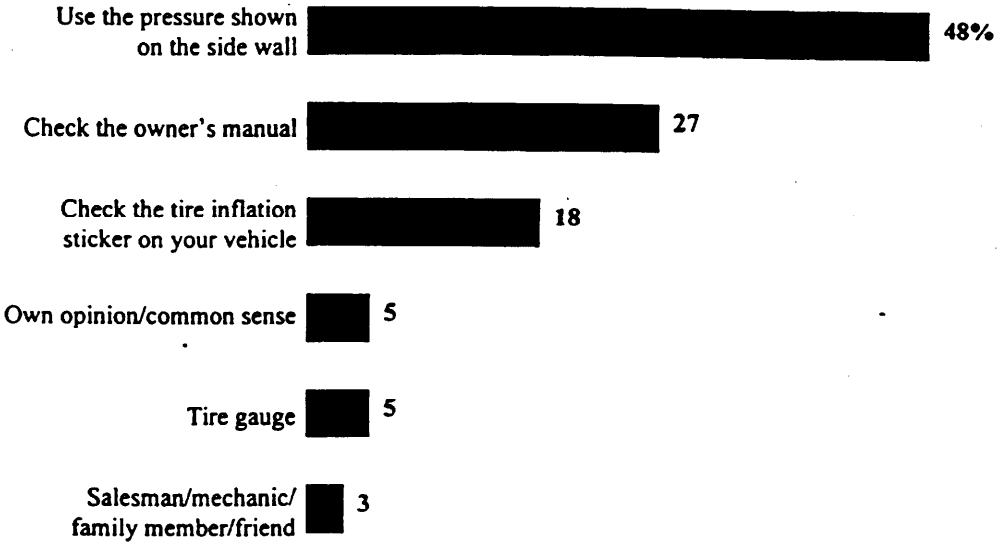
About one in six (18%) check the tire inflation sticker on the vehicle. These two methods, checking the sticker and consulting the owner's manual, although utilized less frequently, are more reliable means of determining the correct tire pressure than looking at the tire sidewall.

Although drivers could state that they use more than one method of determining the correct tire pressure, few actually report doing so. Only 7% of drivers say that they use more than one method. This indicates that drivers tend to stick to a single method for determining correct tire pressure.

Methods Vary For Determining Correct Tire Pressure [Q.6]

Base: Those who report they check their own tire pressure

How do you determine what the correct pressure should be?



Drivers Prefer Checking Tire Pressure With Their Own Equipment

Among the 51% of American drivers who check their own tire pressure, a large majority (86%) use their own tire gauge to do it. This method is preferred most often by men (88% versus 80% of women) and older drivers (96% of those 65+, dropping to 82% of 18-34-year-olds).

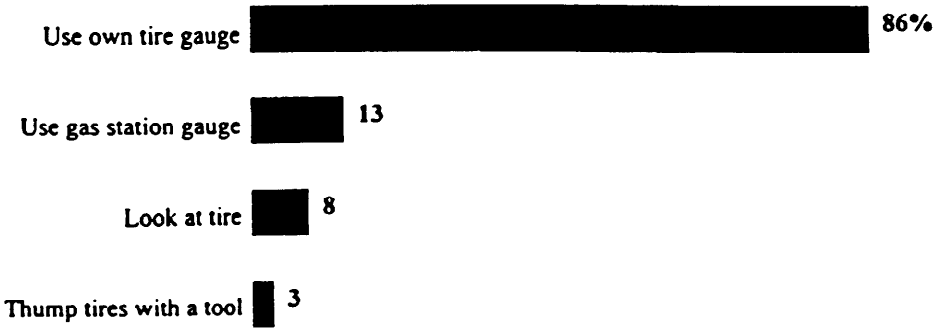
An additional 13% of American drivers use the gas station's gauge.

Fortunately, far fewer use less reliable methods, such as looking at the tire (8%) or thumping the tire with a tool (3%).

Once again, drivers appear to stick with a single method for checking pressure. Only 9% of all drivers saying they use more than one method to check pressure.

Using Own Tire Gauge Is Clear Method Of Choice For Checking Tire Pressure [Q.7]

How do you check the pressure?

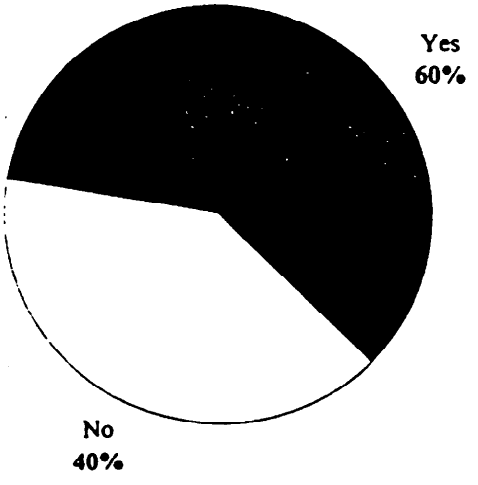


III. Flat Tires: A Common Problem for American Drivers

Six in ten American drivers (60%) have had a flat tire within the past five years, with men (65%) more likely to experience this than women (55%). Not surprisingly, more frequent drivers (10,000 miles+ annually) are more likely to have had a flat than less frequent drivers (64% versus 54%). This may help explain why men–who report driving more than wormen–are more likely to report having had a flat.

Most Have Had A Flat Tire In Past 5 Years [Q.8]

Have you had a flat tire within the past 5 years?



The likelihood of having had a flat tire in the past five years also increases for younger drivers. While about four in ten drivers 65 years or older (41%) have had a flat, almost one in seven 18-34-year-old drivers (69%) report the same. This may be attributed to the finding that younger drivers (18-34 years) drive more, putting 13,000 miles on their vehicles per year, compared to drivers 65 years or older who report a median of 9,999 miles.

The frequency with which younger drivers report having had a flat tire is surprising in a sense, since a good portion of them have not even been driving for five years yet. However, one possible explanation may be that this younger group, just starting out in jobs or in college, may not be able to afford better tires or vehicles, or their proper upkeep.

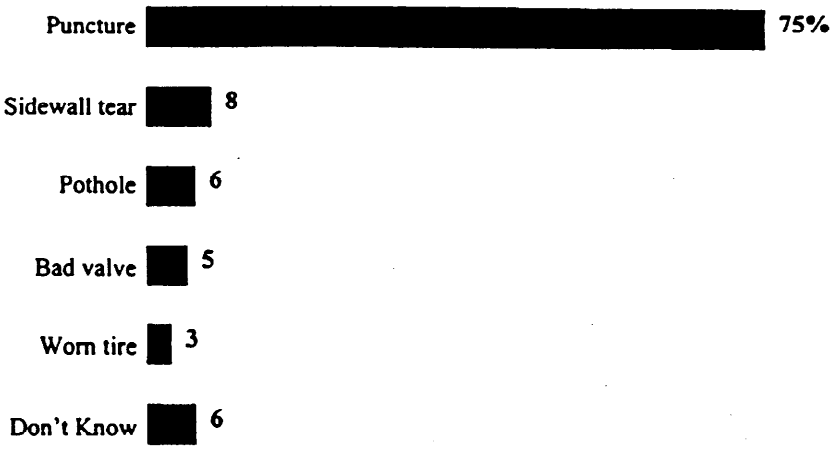
Punctures: Top Source for Tire Woes

In three-quarters of all flat tire cases, the flat was caused by a puncture (75%). Only 6% each report that a pothole or sidewall tear contributed to the flat, or that they don't know why the tire went flat. Even fewer blame it on a bad valve (5%) or a worn tire (3%).

Large Majority Of Flat Tires Caused By Puncture [Q.9]

Base: Those who have had a flat tire in past 5 years

What caused the flat tire?

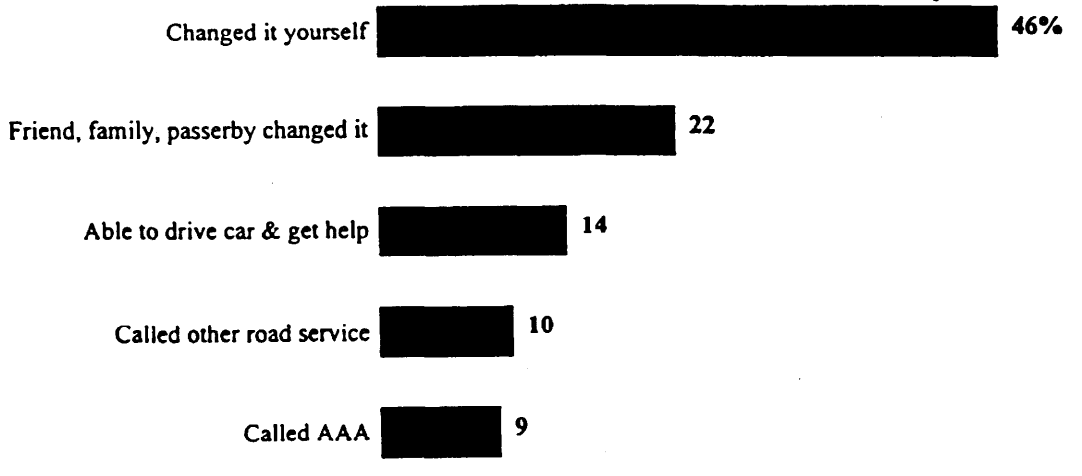


One in Ten American Drivers Call Upon AAA To Fix Their Flats

Consistent with the self-sufficient behavior reported by drivers in checking their own tire pressure, almost half of those who had a flat tire in the past five years report that they changed the tire themselves (46%). One in five (22%) had a friend, family member or passerby change it for them, and almost one in ten called either AAA (9%) or some other road service provider (10%).

Methods Used To Deal With Flat Tire [Q.10]

How did you deal with the flat?



The younger the driver, the more likely they are to say that they changed the flat themselves. Over half of drivers 18-34 (52%) did it themselves, while only a quarter of drivers 65+ (25%) report the same.

Men are far more likely than women to deal with a flat tire themselves (70% versus 17%), as are frequent drivers (10,000+ miles annually) over less frequent drivers (54% versus 27%). Women and less frequent drivers are more likely to enlist the help of a friend, family member or passerby.

Drivers from the northeast are more likely than drivers in other regions of the country to state that they called AAA for help (21% versus 10% of westerners, 7% of those in the north-central region and only 3% of southern drivers). AAA is also more likely to be called by women (11%) than men (7%), and those with a college education or greater (13% versus 11% of those with some college and 4% of those with a high school education or less).

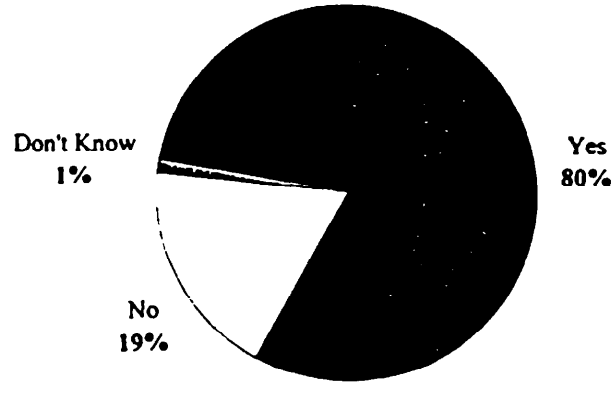
Although Half Do It Themselves, Eight in Ten Say They Could Change a Tire

When asked if they could change a tire by themselves if they had to, eight in ten drivers (80%) claim that they could. This is in sharp contrast to the 45% of drivers who have experienced a flat tire in the past five years and actually changed it themselves. About one in five (19%) admit that they could not change a tire, with only 1% saying they don't know if they could or not.

The most confident groups, in terms of tire-changing ability, are men (96% versus 64% of women), younger drivers (86% of 18-34-year-olds, declining steadily to 56% of drivers 65+), and more frequent drivers (86% versus 71% of less frequent drivers). These groups are also more likely to report that they did indeed change a flat tire in the past five years.

Most Could Change A Flat Tire If Necessary [Q.11]

Could you change a tire by yourself if you had to?



IV. Tire Wear and Accidents

Large Majority of American Drivers Up On Tire Wear Scrutiny

Over nine in ten American drivers (94%) say they check their tires for wear and tear. While drivers once again exhibit loyalty to a single method of tire maintenance (with only 9% choosing more than one option), there is diversity in their choices for how they determine tire wear.

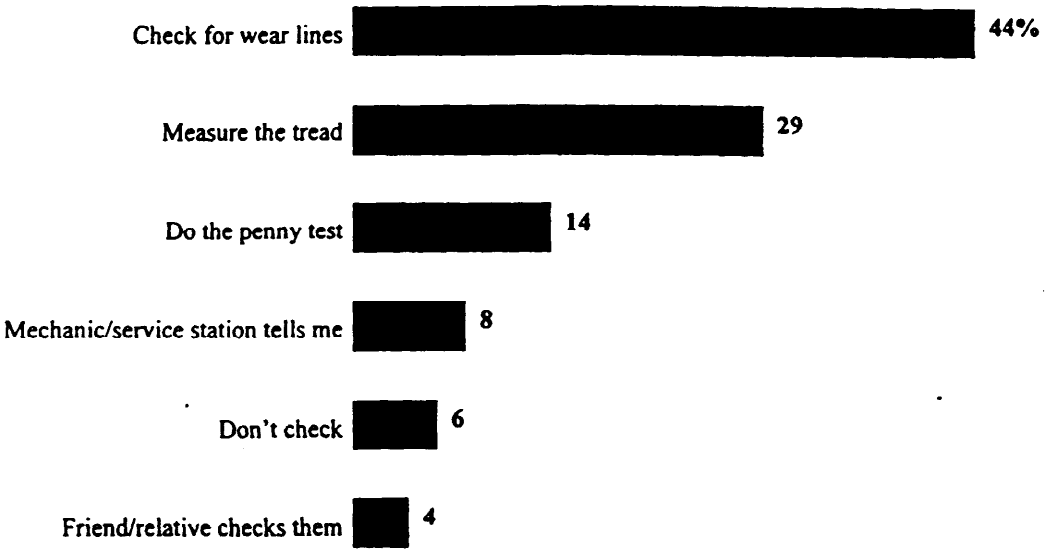
Over four in ten (44%) determine if their tires are too worn by checking for wear lines. Not far behind is measuring the tire's tread, chosen by 29% of drivers.

Less popular methods of determining tire wear are the penny test (14%), having a mechanic or service station attendant tell you (8%), or having a friend or relative check them (4%).

Men are more apt than women to check for wear lines (51% versus 36%) or do the penny test (19% versus 10%), whereas women are more likely to rely on others, preferring to have service station personnel tell them (12% versus 5% of men) or having a friend or relative check the tires for them (8% versus 1% of men).

Drivers Split On How To Check For Tire Wear [Q.12]

How do you determine if your tires are too worn?



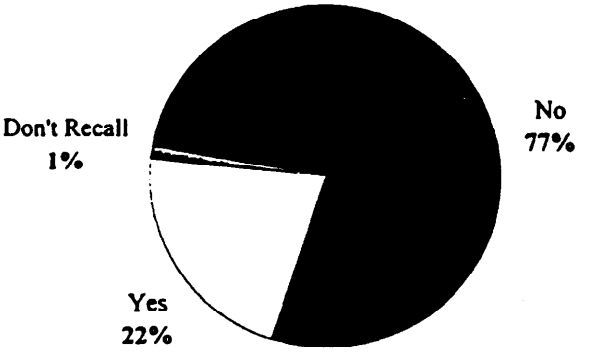
Drivers Say Tire Care Pays Off: Few Accidents a Result of Tire Wear

Over one in five American drivers (22%) report that they have ever had a traffic collision that involved skidding, an event more likely to be reported by men (27% versus 17% of women) and frequent drivers (26% of those driving 10,000 miles or more per year versus 15% of those driving less frequently).

Among those who have been in a skidding accident, a small minority (12%) report that the condition of the tires contributed to the skid.

Few Traffic Collisions Due To Skidding [Q.13]

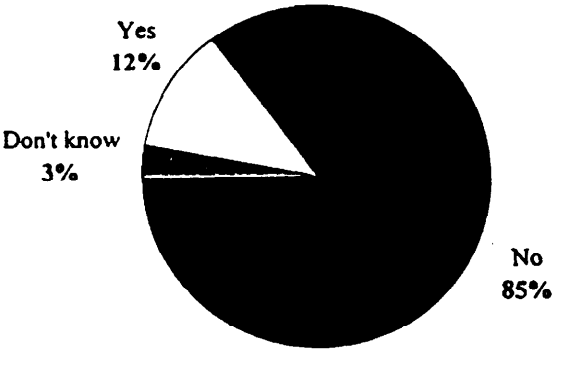
Have you ever had a traffic collision that involved skidding?



Few Blame Tires For Skid [Q.14]

Base: Those who have had a traffic collision involving skidding

Do you think the condition of your tires contributed to the skid?



V. Dealing With Tire Blowout: Most Opt To Slow, Brake, and Park

Almost two-thirds of American drivers (64%) feel that the safest way to deal with a tire blowout would be to slow down, then brake and pull to the side.

Far behind the first option is holding onto the wheel and retaining control of the vehicle, cited by one in ten (10%). Another 8% each say they would slow down or pull over to the side.

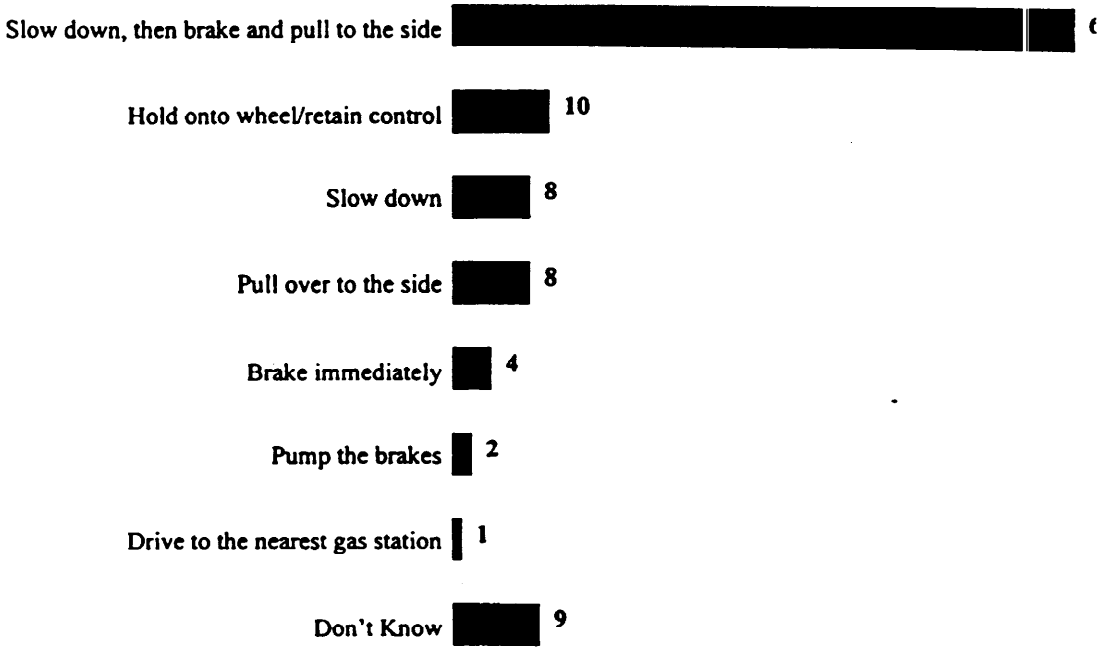
Only 4% state that you should brake immediately, and even less feel that you should pump the brakes (2%) or drive to the nearest gas station (1%).

Almost one in ten (9%) don't know what to do in the event of a blowout.

Respondents' choices for dealing with tire blowout are consistent across all demographic groups.

Most Agree On Safest Way To Deal With Blowout [Q.16]

What do you think is the safest way to deal with a blowout?



Demographic Profile of Sample of American Drivers

Base = 1070

	Number	%
Gender		
Male	539	50
Female	531	50
Age		
18-34	340	32
35-44	253	24
45-54	191	18
55-64	138	13
65+	117	11
Household Income		
<$15,000	103	10
$15,000-<$25,000	121	11
$25,000-<$40,000	223	21
$40,000-<$50,000	130	12
$50,000+	333	31
Region		
Northeast	203	19
North Central	267	25
South	387	36
West	213	20
Education		
High school or less	431	40
Some college	305	29
College graduate or more	329	31
Race		
White	898	84
Black	94	9
Miles Driven Per Year		
<10,000	273	26
10,000+	693	65